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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
The Establishment of Policies	)	
and Service Rules for the Mobile	)	IB Docket No. 99-81
Satellite Service in the 2 GHz Band	)	RM-9328

REPLY COMMENTS OF CELSAT AMERICA, INC.

David D. Otten
President
Celsat America, Inc.
532 S. Gertruda Avenue
Redondo Beach, CA 90277

Antoinette Cook Bush
John C. Quale
Brian D. Weimer
Skadden, Arps, Slate, Meagher & Flom LLP
1440 New York Avenue, N.W.
Washington, D.C. 20005-2111
202-371-7000

Mark A. Grannis
Kelly S. McGinn
Harris, Wiltshire & Grannis LLP
1200 18th Street, N.W.
Washington, DC 20036-2506
202-730-1300

Attorneys for Celsat America, Inc.

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SUMMARY

Celsat America, Inc. ("Celsat") urges the Commission to complete the 2 GHz licensing process prior to the Conference Preparatory Meeting in November 1999. Failure to do so could severely compromise the bargaining position of the United States Government at the meeting.

The flexible band arrangement enjoys the most support among the nine 2 GHz MSS applicants and Celsat continues to recommend it as the best licensing alternative proposed by the Commission. The traditional band plan may unnecessarily restrict future development of MSS at 2 GHz and the negotiated entry approach will create disputes over access to spectrum by subsequent entrants. The flexible band arrangement avoids both of these problems by balancing certainty in the short-term with flexibility in the longer term.

The comments filed by numerous licensees and applicants for licenses in the Ka-band indicate sufficient capacity in the Ka-band to grant Celsat's request for feeder link spectrum. Moreover, no comments raised any substantial legal or technical argument to refute the Commission's tentative conclusion that Celsat should be permitted to pursue its Ka-band application. Accordingly, the Commission's tentative conclusion should be affirmed.

The Commission should adopt the Big LEO service rules for 2 GHz MSS with only minor changes. The most important changes the Commission should make to the Big LEO service rules are to eliminate the financial qualification requirement and to add the requirement of E911 capabilities.

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Celsat America, Inc. ("Celsat") hereby replies to the comments filed regarding the Notice of Proposed Rulemaking released on March 25, 1999 in the above-referenced docket.[1] The NPRM sets forth various Commission proposals for policies and service rules for mobile satellite service in the 2 GHz band.

I. THE COMMISSION'S NUMBER ONE PRIORITY MUST BE COMPLETING THE 2 GHZ LICENSING PROCESS PRIOR TO THE CONFERENCE PREPARATORY MEETING IN NOVEMBER OF 1999

The initial licensing process for qualified 2 GHz applicants can and should be completed prior to the conference preparatory meeting scheduled for November 15-26, 1999. As the Commission knows, the 2 GHz bands at issue in the NPRM are also the subject of proposals currently pending in the informal working group process in preparation for WRC-2000. Specifically, informal working group 1 focuses on mobile satellite service matters, including IMT 2000. If the Commission fails to resolve many of the outstanding issues in the NPRM prior to the November conference preparatory meeting, the bargaining position of the

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[1] Notice of Proposed Rulemaking, FCC 99-50 (released March 25, 1999) (hereinafter "NPRM").

U.S. could be severely compromised at the meeting. All that is necessary for the Commission to issue service rules in the 2 GHz proceeding before the conference preparatory meeting is the resolve to do so. By adopting procedures suggested by Celsat and others, the Commission can expedite the rollout of truly groundbreaking communications services to millions of customers throughout the United States and preserve its bargaining position in the upcoming conference preparatory meetings.

Celsat was the first of the current field of nine applicants to submit a satellite application to offer MSS service at 2 GHz. When Celsat submitted its application in 1994, it could never have imagined that five years later it would be urging the adoption of an "expedited" licensing schedule to enable it to receive its license by the end of 1999. Further administrative delays must not be allowed to interfere with the enormous public benefit in the timely launch and operation of Celsat's MSS system.

Many applicants in this proceeding are seeking 2 GHz spectrum for expansion of systems currently under construction in other bands. Celsat intends to launch and operate a satellite system that will immediately fill a real need in this country for high quality communications services even in the most remote locations of the United States. Furthermore, Celsat's low price will make its service accessible to ordinary Americans. Celsat's service will be a true bargain, selling for pennies per minute, rather than dollars per minute like some of its competitors.[2] Celsat's service will appeal to millions of Americans

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[2] Iridium, for example, offers its MSS service on a global basis with prices ranging from approximately $1.50 to $3.00 per minute. These prohibitively high prices are no doubt one of the root causes of Iridium's highly publicized financial difficulties.

who would not otherwise have access to digital wireless service both because of its affordable price and the ubiquity of its service. In short, Celsat's ability to bring the fruits of satellite technology into the lives of real Americans at a low cost is simply too important to delay any longer.

Although the majority of commenters at least nominally support expediting the licensing process, the NPRM and the responses it elicited among the field of nine applicants and other interested parties reveal a disturbing potential for delay. Celsat urges the Commission to avoid further delays at all costs. Despite the importance of many of the issues raised in the NPRM and by the commenters, none of these issues presents a problem of such magnitude that it cannot be resolved without stalling the rollout of this important service. Moreover, there is no need to complicate what should be a fairly simple exercise. The primary task before the Commission is to adopt a fair and efficient method of assigning spectrum to the nine applicants, while ensuring that the public interest is served through retaining sufficient flexibility for the development of service within the band.

Celsat urges the Commission to consider the following proposals or responses to proposals of commenters as the means of expediting the concluding phase of the 2 GHz licensing process:

- **Eliminate three months of delay by abandoning the amendment process.** The Commission would be in a position to award licenses at least three months sooner if it eliminated the requirement that applicants amend their applications to conform with the band plan and service rules. Although a three month delay appears to be desirable to some 2 GHz applicants,[3] it disadvantages American

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[3] *See, e.g.*, MCHI Comments at 18 (urging the Commission to provide applicants with *at* (continued...)

consumers, especially those currently without access to wireless service or even wireline service. There is precedent for this streamlined procedure; in the first processing round of the Ka-band, almost all of the pending applications were inconsistent with the band plan developed by the Commission. Nevertheless, the Commission obviated the need for successful applicants to conform their satellite applications to the final band plan, orbital assignment schedule, and service rules by ordering licensees to comply with all rules adopted for licensed systems and to file a letter with the Commission stating their intention to construct a system in compliance with those rules. Dispensing with the practice of requiring applicants to amend their satellite applications while binding all licensees to full compliance with the 2 GHz band plan and service rules would greatly expedite the licensing process and thereby speed public access to these important services.

- **If amendments are required, bifurcate the release of the band plan from the process of developing and releasing service rules.** At a minimum, the Commission should announce a band plan before adopting service rules so that the entire amendment process can proceed concurrently with consideration of service rules. Service rules could then be prepared and released in a separate order later this fall. Bifurcating the Commission's decisions regarding the band plan and the service rules in this manner will permit the amendment cycle to be completed earlier. Celsat respectfully reiterates, however, that this approach is inferior to the approach taken in the first processing round of the Ka-band where the Commission issued the licenses prior to issuing the final band plan and service rules.

(...continued)

least three months following the adoption of technical requirements and a final band sharing plan to amend their applications).

- **Resolve relocation issues through the ET Docket No. 95-18 proceeding.**[4] Although Celsat supports interim use of the 2 GHz spectrum allocated to MSS at 2 GHz by terrestrial incumbents for a reasonable period until full relocation can be smoothly completed, the fact remains that the international and U.S. MSS allocations in this band become effective on January 1, 2000.[5] The Commission should under no circumstances allow inevitable disputes over relocation issues to slow the 2 GHz licensing process.

- **Adopt Big LEO service rules with necessary adjustments.** The Commission should adopt the Big LEO service rules with only minor adjustments – eliminating financial qualifications and adding the requirement of E911 capability for 2 GHz systems.

Above all, the Commission must be sensitive to the fact that any delay in its licensing process now postpones not only the date upon which the public will receive MSS service at 2 GHz, but also the date upon which the Commission will be able to reclaim unused spectrum from those unable to meet construction milestones in order to make it available to 2 GHz MSS

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4 The Society of Broadcast Engineers, Inc. ("SBE") filed comments describing the NPRM as "premature given the pendancy of the Third Further Notice of Proposed Rulemaking (FNPRM) to ET Docket 95-18" and stating that the proposed spectrum assignment to MSS systems "may never come to pass if MSS is not forthcoming with funds to relocate incumbent TV BAS users." Society of Broadcast Engineers Comments at 1-2. However, there is simply no denying that the 2 GHz spectrum has been allocated both internationally and in the U.S. for MSS. MSS operators' spectrum assignments will remain encumbered by incumbent BAS users for some finite period until relocation is complete, but the fact remains that relocation will occur. Thus, this NPRM, aimed at licensing MSS systems to operate in the 2 GHz band, is by no means "premature." SBE is correct, however, in advising that the proper venue in which to consider the most appropriate method of handling relocation is in ET Docket No. 95-18.

5 More specifically, effective January 1, 2000, the 2010-2025 MHz (uplink) and the 2165-2170 MHz (downlink) band will be available for MSS in the United States and Canada. Effective January 1, 2005, the 2010-2025 MHz (uplink) band will be available for MSS in all of Region 2. In 1997, the Commission allocated the 1990-2025 MHz (uplink) and 2165-2200 MHz (downlink) bands to MSS in the United States.

systems actually providing service.[6] Considering the number of incumbent operators in this proceeding who have yet to implement their already-licensed spectrum, the Commission should avoid any action that postpones the assignment of spectrum to operators who will promptly initiate service.

II. THE COMMISSION SHOULD ADOPT THE FLEXIBLE BAND ARRANGEMENT

The flexible band arrangement enjoys the most support among the nine applicants.[7] This strong support is a reflection of the fact that, among the four licensing procedures proposed in the NPRM, the flexible band arrangement is the only one that will provide licensees with sufficient spectrum to roll-out service, guarantee expansion spectrum, and avoid costly and time-consuming disputes over access to spectrum at 2 GHz.

A. The Commission Should Segment the 2 GHz Spectrum into Global and Regional Bands

Before turning to consideration of the strong arguments in favor of adopting the flexible band arrangement to govern licensing in the 2 GHz band, Celsat notes the

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6 Already, Constellation Communications, Inc. ("CCI") is suggesting that milestones should be extended for applicants proposing "expansions" of existing Big LEO systems. CCI Comments at 25. The only possible justification for such an approach would be to facilitate even longer warehousing of the spectrum. The Commission should reject CCI's proposal as inconsistent with the public interest in obtaining access to much needed mobile satellite services at the earliest possible time.

7 Celsat, Inmarsat, Mobile Communications Holdings, Inc. ("MCHI"), and TMI Communications ("TMI") all support the flexible band plan (each with minor modifications). Boeing, Iridium and CCI generally support the traditional band plan. Globalstar supports its own "all shared band plan" and, in the alternative, supports a modified version of the traditional band plan. ICO supports the negotiated entry approach. No applicant supports auctions.

widespread support in the comments for the Commission's proposal to segment the 2 GHz spectrum into global and regional bands.[8] These comments appear to recognize the eminently practical reason for segmenting the band – the pointlessness of attempting to license (or build) a global system in spectrum that is unavailable over two-thirds of the globe. Thus, the Commission should make a virtue of necessity and authorize global and regional systems in the parts of the band appropriate to the service they intend to offer.

In this regard, Celsat echoes the comments of Inmarsat that "the GSO or NGSO nature of a given satellite is not necessarily a relevant factor in terms of spectrum assignment."[9] As Inmarsat explains, its GSO, multi-satellite system will provide global service and, therefore, should not be allocated spectrum in those portions of the 2 GHz band available for MSS only in Region 2.[10] The relevant feature to which the Commission should look when assigning spectrum is whether the proposed system is global or regional, not NGSO versus GSO.

Celsat disagrees strongly, however, with the proposal of ICO and the ICO User Group that GSOs be assigned no more than 10 MHz of regionally allocated spectrum in each

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8 *See, e.g.,* ICO Comments at 7-8; Iridium Comments at 17; CCI Comments at 8 (supporting proposal in NPRM at ¶ 28 that GSO systems be "grouped" primarily in that portion of the 2 GHz band allocated for MSS in Region 2); Inmarsat Comments at 8.

9 Inmarsat Comments at 8.

10 The Commission should dismiss Iridium's erroneous claim that GSO systems are "capable of providing only a regional service. . . [and therefore] it would be an inefficient use of spectrum to authorize GSO systems within these global MSS frequencies." Iridium Comments at 12. In light of Inmarsat's global GSO service, Iridium's comment is entirely misplaced.

direction.[11] Instead, the Commission should allocate 15 MHz of spectrum in the downlink to be available on an exclusive basis to regional systems in order to create a symmetrical pairing with the 15 MHz of regional uplink spectrum currently available only in Region 2.[12] Following the proposal of ICO and the ICO User Group would result in 5 MHz of spectrum in the uplink remaining unused because of its unavailability for MSS outside of Region 2.

B. The Flexible Band Arrangement Offers Both Certainty in the Short-Term and Flexibility for Longer Term Development of MSS Service at 2 GHz

Celsat urges the Commission to select the flexible band plan because this proposed spectrum assignment method ensures the two most important elements necessary for successful deployment of service in the 2 GHz band: *certainty* and *flexibility.* The flexible band arrangement provides certainty because each system will receive 2.5 MHz of spectrum in each direction to launch and begin offering service. At the same time, the flexible band arrangement promotes *flexibility* because successful systems will be able to gain access to additional spectrum as demand for their service increases and as spectrum unused by systems failing to meet milestones reverts to the Commission. And unlike any of the other alternative assignment methods, the flexible band plan will be virtually self-executing if the expansion method adopted by the Commission from the outset ensures that spectrum reserves will be made available to systems based on demonstrated and verifiable service, rather than overstated future projections.

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[11] ICO Comments at 5; *See also* ICO USA Service Group Comments at 7.

[12] The current regional allocation is for 5 MHz in the downlink (2165-2170).

Globalstar is the only applicant to maintain that the initial spectrum assignment of 2.5 MHz in each direction is "insufficient to develop a realistic business plan, obtain financing, and attract investors and service providers."[13] Globalstar does not provide an estimate of what it regards as a minimum amount of spectrum that would enable it to attract sufficient investor interest to guarantee its success. Nor does Globalstar acknowledge that the Commission has provided for the sharing of bands by licensees using CDMA technology. In light of the fact that eight of the nine applicants have in fact determined that their systems can be initiated with only 2.5 MHz in each direction, the burden falls on Globalstar to demonstrate that 2.5 MHz of spectrum is insufficient to initiate 2 GHz MSS service, whether for itself or for others. Globalstar has not made this demonstration in its comments and, accordingly, the Commission should conclude (along with eight of the nine applicants in this proceeding) that 2.5 MHz of spectrum is sufficient for 2 GHz MSS applicants to initiate their service.[14]

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13 Globalstar Comments at 15.

14 Globalstar's comments introduce several novel concepts upon which the Commission simply cannot act. For example, Globalstar presumes - without providing any technical demonstration whatsoever - that all proposed 2 GHz MSS systems can be licensed across the entire 2 GHz band and somehow miraculously share the spectrum. *Id.* at 9-12. Globalstar calls this proposal the "all shared band." Globalstar also ignores the consensus among all eight other applicants and the Commission that, unlike CDMA systems, TDMA systems cannot share spectrum. *Id.* at 17. Globalstar bases this conclusion on "[s]tudies conducted by Globalstar." *Id.* Unfortunately, Globalstar has not shared these studies with the Commission or - to Celsat's knowledge - anyone else. Accordingly, the Commission should dismiss Globalstar's unsupported claims and certainly should not adopt the "all shared band" plan.

Moreover, none of the applicants indicates that it will be technically infeasible for its system to operate with 2.5 MHz in each direction.[15] In this regard, Celsat concurs with the comments of CCI that "the Commission should indicate the minimum amount of spectrum guaranteed to each system, and each system operator should then design its system with enough capacity to be economically viable within that spectrum constraint."[16] Forcing applicants to design their systems to operate on a spectrally efficient basis from the outset is not only good business, but consistent with the reality that MSS spectrum is indeed scarce.

Some commenters also argue that the flexible band plan will subject licensees to too much uncertainty with regard to how much spectrum they ultimately will be able to acquire.[17] Celsat agrees that it would be preferable for each system to have access to as much spectrum as it requested in its original application. However, the reality is that with only 70 MHz of spectrum available for licensing nine systems, compromise will be necessary. Furthermore, since there will be far fewer than nine systems operating in the band, the best processing alternative is the one that offers the greatest assurance that a successful system will have access to sufficient spectrum to meet the needs of a growing customer base. The flexible band arrangement achieves this by reserving spectrum for assignment to successful (and hence

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15 Boeing prefers a 3.75 MHz initial assignment for technical reasons unique to its system. Boeing Comments at 19. Boeing's unique desire for an initial allocation of 3.75 MHz of spectrum provides no basis for the Commission to adopt the traditional band plan as proposed by Boeing.

16 CCI Comments at 10.

17 Globalstar Comments at 16; CCI Comments at 11.

capacity-constrained) licensees as soon as possible instead of allowing it to lie fallow with defaulting licensees.

Under the traditional band approach, only slightly more spectrum will be assigned to each system initially and each will labor under significantly more uncertainty with regard to whether expansion spectrum will be available. Indeed, it is ironic that those commenters most concerned about the flexible plan's uncertainty endorse the traditional band plan in which no expansion spectrum is guaranteed but must instead be reclaimed six or seven years after licensing from systems that fail to meet milestones.

In its comments, Celsat set forth a number of suggestions aimed at making the flexible band plan as self-executing as possible – ensuring that those systems most likely to put the spectrum to uses in the public interest will promptly receive expansion spectrum. Celsat proposed both a timetable and a methodology for assigning spectrum based on the following principles:

- No expansion spectrum should be permanently assigned to any operator earlier than thirty-six months after all 2 GHz MSS systems are licensed.
- Thirty-six months after all 2 GHz MSS systems are licensed, and annually thereafter, each licensee should be required to file with the Commission a report stating the number of "subscriber minutes" of traffic for which it billed during the preceding year and the total bandwidth used for that purpose.[18]

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[18] If an operator does not meter or bill its voice or data traffic on a per-minute basis, it should use some commercially and technically reasonable method to calculate a per-minute equivalent. Because only U.S. spectrum rights are at stake, only radio communications to, from, or within the United States should be counted. Moreover, the number of minutes billed for radio communications to rural subscribers should be weighted heavily in order to reflect the Commission's preference for licensees serving (continued...)

- On a date not later than four years after licensing, the Commission should begin awarding expansion spectrum to operators who are providing commercial service and who demonstrate the need for expansion spectrum.[19]

- At twelve-month intervals thereafter, the Commission should again assign one additional 1.25 MHz segment in each direction (within each expansion band) to the operator with the highest number of subscriber minutes per megahertz. This process should continue until all available expansion spectrum has been assigned.

- Spectrum reclaimed from operators that fail to meet their milestones should not be reassigned in a second processing round but instead should be added to the pool of available expansion spectrum and awarded to operating systems based on the criteria described above.

If the Commission sets forth clear rules from the outset with regard to the distribution of expansion spectrum, operators and consumers alike will benefit from dynamic growth of service in the 2 GHz band.

In addition to the foregoing procedural proposals, Celsat agrees with Iridium's concern about the potential drawbacks of the Commission's proposal to authorize systems to operate across their respective core spectrum band, subject to coordination with other systems

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(...continued)
rural areas. All figures should be presented on an annualized basis to facilitate easy comparison.

[19] Within each of the two system types, one additional 1.25 MHz segment in each direction should be assigned to the operator with the highest number of subscriber minutes per megahertz during the preceding twelve months. This rewards both commercial success and spectrum efficiency, and eliminates or reduces the opportunity for carriers to "cry wolf" about the need for expansion spectrum.

that have commenced operations in that core band.[20] Although Celsat does not oppose interim use of the spectrum assigned to systems that have not launched, such interim use should be permitted pursuant to a special temporary authorization ("STA") so as to avoid any uncertainty about a licensee's entitlement to use specified frequencies. Utilizing STAs for interim use will have two primary benefits. *First*, it will reduce relocation costs in the near term as it will allow 2 GHz MSS licensees to utilize "sweet spots" in the band (certain portions of the 2 GHz uplink that are located at transition points between BAS channels) until the BAS transition is complete. *Second*, allowing operation across the band by STA will ensure that no operator has any illusions about this constituting a permanent authorization and thereby prevents the assertion of "squatter's rights" whenever new entrants deploy.

This first advantage of the STA approach bears repeating. Utilizing STAs for interim use across the core band segments will reduce relocation costs in the near term. ICO and the ICO User Group have attempted throughout this proceeding to construe the negotiated entry approach as somehow miraculously solving "the relocation issue."[21] In response, the other eight applicants have argued that early entrants would enjoy certain strategic advantages under the negotiated entry approach.[22] The STA approach possesses the same advantages as the negotiated entry approach by permitting each applicant to use a portion of the 2 GHz band

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20 Iridium Comments at 22 *citing* NPRM at ¶ 32.

21 *See, e.g.*, ICO Comments at 6-7; ICO User Group Comments at 8-16.

22 The Commission acknowledges this problem with the negotiated entry approach. *See* NPRM at ¶ 41 (recognizing that the negotiated entry approach might give early entrants a strategic advantage).

other than the one it is assigned on a permanent basis. Accordingly, the first applicant to deploy its system can use the "sweet spots" in the 2 GHz band pursuant to STA until the applicant assigned the "sweet spots" on a permanent basis deploys. The STA approach, however, also mitigates the concerns of the other eight applicants that they will have to negotiate with the first entrant prior to initiating service because it will be clear to the initial entrant using the "sweet spots" that it is using them on a temporary basis only.

C. *A Priori* Plans Such as the Flexible Band Plan and the Traditional Band Plan Are Vastly Superior to Post-licensing Coordination

Eight of the nine applicants oppose the conditional licensing scheme proposed by ICO and the ICO User Group. This option, dubbed the negotiated entry approach, should be abandoned once and for all because of the likelihood that it will delay the introduction of important MSS service at 2 GHz and inhibit competition. Given that ICO's system is closer to implementation than the systems of other 2 GHz applicants, under the ICO-ICO User Group "conditional licensing" proposal, ICO would be able to operate across the entire 70 MHz of spectrum until another system becomes "entitled to negotiate" with ICO.[23] ICO would then act in lieu of the Commission as the entity that determines whether other "conditional licensees" can become "actual licensees" (*i.e.* operating systems). Each applicant would be forced to rely on ICO to negotiate in good faith and welcome new competitors as it slowly relinquishes control over the entire 2 GHz MSS spectrum allocation.

One of the arguments that ICO makes in favor of the negotiated entry approach is that *a priori* plans, like the flexible band approach and the traditional band plan, will delay

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[23] ICO Comments at 7.

competition by requiring an industry consensus in the near term.[24] But having solicited comment from all interested parties, the Commission is not bound to await emergence of an industry consensus behind one of the contemplated licensing approaches before selecting one. Indeed, the Commission will be serving its true purpose by exercising its statutory authority and promptly selecting the licensing approach that most clearly serves the public interest. Prompt Commission action selecting a licensing approach will also fulfill the Commission's stated mandate of "promoting competition by creating opportunities for new entrants, *expediting the authorization process*, and providing incentives for system operators to commence service to the public *promptly* using state of the art technology."[25] Thus, the Commission should select either the flexible band plan or the traditional band (and for all the reasons discussed above, the Commission should prefer the flexible approach) in order to both expedite the process of introducing competition in MSS service and to provide all licensees with access to an identifiable initial assignment of spectrum. Conditional licenses will simply not provide investors with the assurance that the 2 GHz systems are real and that those that launch after ICO will have access to sufficient spectrum on a timely basis to succeed.[26]

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24 ICO Comments at 10.

25 NPRM at ¶ 1 (emphasis added).

26 Notwithstanding the letters the ICO User Group submitted from DLJ and ING Bearings concerning the feasibility of raising money with a conditional license, Celsat concurs with other 2 GHz MSS commenters that applicants will be seriously disadvantaged in the financial markets because of the highly conditional nature of the licenses. *See, e.g.*, Globalstar Comments at 19; MCHI Comments at 13; CCI Comments at 18. Incidentally, no applicant in this proceeding has any incentive to obtain a letter from an investment bank stating the conditions under which the bank will not raise money for the applicant.

One final point in the ICO User Group Comments requires clarification. The ICO User Group misconstrues the Commission's request for comments on whether the negotiated entry approach "provides system proponents with appropriate flexibility to abide by the Commission's ultimate rules for relocation of incumbent users of the 2 GHz MSS frequencies"[27] as somehow an endorsement of the advantages of the negotiated entry approach vis-a-vis relocation.[28] As noted above, however, Celsat's proposal to permit applicants under the flexible band arrangement to use frequencies other than those they are licensed to use on a permanent basis by grant of successive STAs would solve "the relocation issue" equally well. The Commission should not be misled by the arguments of the ICO User Group that the negotiated entry approach is superior at solving relocation issues.

In general, ICO and the ICO User Group seem to be operating under the misapprehension that by eliminating the regulator (i.e., the Commission), the parties that "really have an interest in this matter" – the applicants and LOI filers – would arrive at a solution that would be most efficient for them. However, ICO and the ICO User Group are wrong on at least three grounds. *First*, industry consensus is hard to come by. Surely ICO is aware of the disastrous history of industry-led negotiations.[29] With that history, it would be

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27 NPRM at ¶ 41.

28 ICO User Group Comments at 31.

29 As Celsat observed in its comments, industry-led negotiations failed miserably in both the Big LEO and Little LEO proceedings. Indeed, it was only after the Commission forced compromise in the Big LEO processing round and attrition in the applicant pool made real compromise unnecessary in the second Little LEO processing round that spectrum-sharing plans were adopted. *See* Celsat Comments at 15-16.

naïve to think that the 2 GHz applicants, which are manifestly incapable of arriving at an industry consensus on much of anything,[30] will suddenly be transformed into a collegial body when one system such as ICO is up and the rest are seeking to compete. [31]

Second, the Commission's role is not to ensure that all of the applicants are happy with their spectrum assignments, but rather to protect the public interest – something it is uniquely qualified to do. Radio spectrum is a scarce resource that can be used to deliver enormous benefits to the public. However, the interests of system operators do not necessarily coincide with those of the public. Therefore, the Commission must zealously advocate the public interest in each and every phase of licensing proceedings to ensure that service is accessible to the public.

Third, adoption of a negotiated entry approach would herald a sea change in the way Commission licenses are viewed both by financial markets and by the rest of the world. It is often taken for granted in the United States that a system licensed by the FCC will in all likelihood be capable of launching and operating a valuable service. However, the same assurance does not necessarily accompany a license acquired in countries where national

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30 Given the inability of the MSS Coalition (which was organized by ICO) to reach a broad consensus on any licensing issues, ICO should be keenly aware of this fact.

31 Interestingly, anticipating the likelihood that the industry-led negotiations that they propose will indeed fail, ICO proposes that the Commission adopt a coordination dispute resolution mechanism under which "a new entrant could enlist the Commission's aid after commencing good-faith negotiations with an early entrant 2 GHz MSS system." ICO Comments at 9-10 . Celsat urges the Commission to avoid the need to clean up the mess that would result from post-licensing coordination. Instead, the Commission should adopt either the flexible or traditional band plan which (together) are advocated by eight of the nine applicants.

regulators utilize a laissez-faire approach to satellite licensing. As one foreign satellite operator observed, "the FCC is today the only really fully recognized authority that scrutinizes licenses for satellite systems. . . . The FCC provides independent technical validation."[32] If the Commission were to adopt the negotiated entry approach and issue "conditional licenses" without any assurance that all of the licensees would be able to operate without interfering with one another, the Commission would be abdicating its unique, globally-respected role as the premier national regulator and technical coordinator of satellite communication systems. An FCC license has long been the most respected indication that a given satellite project is "real," thanks to the seriousness with which the Commission has discharged its duties.

III. THE COMMISSION CAN AND SHOULD ADOPT POLICIES THAT PROMOTE DEVELOPMENT OF SERVICE TO RURAL COMMUNITIES ACROSS THE UNITED STATES

One of the reasons the Commission allocated 70 MHz of spectrum in the 2 GHz band to MSS in the United States was the potential for systems operating in this band to dramatically promote the development of regional and global communications to rural and unserved or underserved communities in the United States.[33] In the NPRM, the Commission reiterates its commitment to "encouraging delivery of telecommunications services, including satellite services, to unserved and high-cost communities seeking to develop cost-effective

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32 Peter B. deSelding, Stamp of Approval from FCC Critical for Foreign Operators, *Space News*, at 10, February 15, 1999 (quoting Marc Jamy, General Counsel and Senior Vice President for Alcatel Space, in an address before the Space and Satellite Finance Conference in London.)

33 NPRM at ¶ 2.

incentives for such services."[34] Even more specifically, in its 2 GHz allocation order, the Commission expressed its belief that this spectrum "would provide communications to underserved areas, such as *rural and remote* areas where PCS and cellular, and other mobile services are less feasible."[35]

Among the field of nine applicants, Celsat's service has the strongest potential to meet the needs of Americans across the country who currently do not have access to terrestrial wireless services such as cellular or PCS service, including Indians on Indian Reservations. Celsat's system offers the highest capacity of all currently proposed 2 GHz MSS systems and will be less costly to implement than any of the other 2 GHz systems – a cost savings that it will pass on to its customers. Given Celsat's unique ability to provide low cost service to rural and other unserved communities, Celsat urges the Commission to adopt its proposal to grant 2 GHz applicants that successfully serve rural and previously unserved communities preferential access to expansion spectrum as it becomes available.[36]

Several commenters urge the Commission to avoid consideration of service to unserved communities in expansion band decisions, noting that all MSS systems have the necessary coverage, or that MSS operators will be acting as wholesalers of capacity and will

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34 *Id.* at ¶ 95.

35 *Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile Satellite Service*, 12 FCC Rcd 7388, 7395 (1997) (emphasis added).

36 NPRM at ¶ 95.

not have control over how particular markets are served.[37] Granted, all MSS systems are technically capable of providing service to rural areas. But it makes all the difference in the world whether the service thus provided comes over a $1,000-$3,000 handset at $1.50-$3.00 per minute (e.g., Iridium's Big LEO service), or a $200 handset (or perhaps even free) at pennies per minute (e.g., Celsat's service). The system parameters that determine the ultimate cost and quality of service are decided not by distributors but by operators, usually prior to licensing. It follows that the Commission can adopt licensing policies that encourage operators to carry traffic in remote regions. This will benefit millions of current PCS subscribers in the United States and around the world, as well as the millions of North Americans who remain unserved by terrestrial technologies.

With respect to service to rural communities, Boeing makes the peculiar argument that its service, which will provide communications and navigation services to the aeronautical community, should be regarded as serving "unserved communities" because it will "serve the entire United States, the oceans and every continent and country."[38] This truly strains the definition of "unserved communities" to its breaking point and is not in keeping with the real needs of rural America identified by the Commission.

As Celsat and many other commenters pointed out in their pleadings, the Commission should not permit Boeing to use spectrum at 2 GHz for the provision of AMS(R)S because such use is inconsistent with one of the primary reasons the Commission

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37 Iridium Comments at 41; ICO Comments at 20. *See also* CCI Comments at 27-28; Globalstar Comments at 44.

38 Boeing Comments at 17.

allocated spectrum at 2 GHz for MSS: "To provide the public, especially rural Americans, access to new and competitive technologies."[39] Moreover, the Commission should take note of the position expressed by the National Telecommunications and Information Administration ("NTIA") that "[d]etailed discussions of the technical parameters of Boeing's proposed Navigation Augmentation Service will be necessary with the Department of Defense and the Federal Aviation Administration before NTIA could concur."[40] It is extremely unlikely that any such discussions will be concluded in the near future. Given the urgent need to adopt licensing and service rules in this proceeding, the Commission should not permit Boeing's application to slow down this process. Finally, Aeronautical Radio, Inc., the communications company of the air transport industry, notes that "absent an international

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39 Comments of Celsat America, Inc. (May 4, 1998) *citing Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile-Satellite Service*, 12 FCC Rcd 7388, ¶ 4 (1997)).

40 NTIA Comments at iv. One statement by NTIA in its comments requires clarification. NTIA claims that TDMA will interfere with WAAS receivers more than CDMA. It is quite the contrary. If WAAS uses a constraint-length 7, rate ½ convolutional code, transmitting at 500 coded bits per second, it requires about 6 successive 500 bps symbols to be erased to cause an error, even without interleaving. WAAS should use interleaving to increase the burst error tolerance still further, but even without it, Celsat' uplink format of 2.26 ms bursts every 9.2 ms will only erase 1 to 2 symbols every 8, which is insufficient to cause an error, *however strong* the TDMA bursts are. With CDMA however, *every* WAAS bit is interfered with, so once the interference exceeds a threshold, WAAS receivers are dead. Thus, in contrast to NTIA's assumption, bursty interference is most likely very much less damaging to WAAS reception than continuous interference, and they could ensure that this was even more so by using interleaving. In any case, there is no argument for a different averaging time for CDMA as opposed to TDMA interferers. The averaging time to use depends on the victim receiver's susceptibility, and not on the transmitter. If the victim receiver is susceptible principally to the level of interference in a 2 ms period, then a 2 ms averaging period should be used, with a "peak hold" on the output of the averager.

allocation and international standards, the [Boeing] system would not likely achieve the consensus necessary to support carriage of the equipment."[41] In short, Boeing's proposed use of the 2 GHz band for AMS(R)S faces significant regulatory hurdles which should not be allowed to slow the licensing of those 2 GHz MSS applicants who have applied to use the 2 GHz MSS band to provide mobile satellite service. Accordingly, the Commission should not permit AMS(R)S in the 2 GHz band and most certainly should not regard this type of service as fulfilling the goal of extending wireless communications services to unserved communities.

IV. THE COMMISSION SHOULD AFFIRM ITS TENTATIVE CONCLUSION THAT CELSAT'S APPLICATION FOR FEEDER LINK SPECTRUM COMPLIES WITH THE KA-BAND PLAN

As is evident in the NPRM, the single most controversial non-service link issue associated with the launch of service in the 2 GHz band is assignment of feeder links to the applicants across a wide range of frequencies. Celsat is currently participating in the second Ka-band processing round in support of its request for 1700 MHz of feeder link spectrum. Celsat originally requested a feeder link assignment in the portion of the band designated primarily for LMDS on the uplink and FS and FSS on the downlink. However, at the request of the Commission's staff and in the interest of exhibiting maximum flexibility vis-a-vis the Commission and other Ka-band applicants, Celsat broadened its request.

The Commission determined that Celsat's application should be processed in both the 2 GHz MSS processing round and the Ka-band processing round. In the Ka-band processing round, a wide variety of options have been suggested for Celsat's feeder links.

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[41] Aeronautical Radio, Inc. Comments at 5.

Most obviously, Celsat can pursue its 1700 MHz in the bands designated as GSO FSS on a primary basis under the Commission's band plan. This follows from the fact that MSS feeder links are a form of GSO FSS service. Alternatively, Celsat can pursue 1700 MHz elsewhere in the Ka-band, observing whatever constraints are imposed by the 28 GHz band plan and the emerging 18 GHz band plan.

Naturally, other applicants as well as some incumbents have an interest in which of these options the Commission ultimately selects in order to license Celsat's feeder links, and some of the interested parties have expressed their views in this proceeding. Perhaps the most noteworthy observation about these comments is that -- of the six or so commenters with a direct interest in the Ka-band -- only one actually asked the Commission to reverse its tentative conclusion that Celsat can pursue those portions of the Ka-band allocated to GSO FSS.[42] In other words, most commenters with a direct interest in the Ka-band appear to have concluded that Celsat can indeed be accommodated in the Ka-band. In fact, Hughes -- a first round Ka-band licensee -- proposed a novel approach to licensing Celsat in the Ka-band which Celsat is currently analyzing.[43] In short, there appear to be no impediments (either due

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[42] Pegasus Development Corporation asked the Commission to reverse its tentative conclusion because, in its view, Celsat's use of Ka-band GSO FSS resources for feeder links would be "inefficient." Pegasus Development Corporation Comments at 1. Pegasus, however, is not opposed to Celsat pursuing its feeder link request in portions of the Ka-band where GSO FSS is allocated on a secondary basis. Thus, even the sole commenter asking the Commission to reverse its tentative conclusion has determined that Celsat can be accommodated somewhere in the Ka-band.

[43] Hughes suggests licensing Celsat to use the non-overlapping portions of the Ka-band allocated to certain first round licensees so that Celsat can operate from the same orbital locations as those licensees. Hughes Comments at 7.

to regulatory issues or lack of spectrum or orbital resources) to accommodating Celsat in the second processing round of the K-band. Celsat will continue to work with all interested parties to develop an orbital assignment plan that allows the Commission to license all qualified applicants as soon as possible.

One additional issue with respect to feeder links requires comment. In the NPRM, the Commission noted a number of policy reasons for permitting GSO MSS feeder links in the Ka-band. It might also have noted the dubious legality of prohibiting GSO MSS feeder links while permitting NGSO MSS feeder links in the Ka-band. Such a policy would be irrational in light of the fact that NGSO MSS feeder links cannot easily share with GSO FSS service links but GSO MSS feeder links share seamlessly. As Celsat has repeatedly pointed out, GSO MSS feeder links *are* GSO FSS links and are thus permitted wherever GSO FSS service is permitted under the 28 GHz band plan.[44]

Celsat remains confident that its feeder link request will be granted in the Ka-band and commends the Commission for acknowledging that Celsat deserves consideration in the Ka-band proceeding.

V. THE COMMISSION SHOULD NOT ADOPT FINANCIAL QUALIFICATIONS BUT SHOULD RELY INSTEAD ON IMPLEMENTATION MILESTONES

The overwhelming support among the nine applicants to forego financial qualifications is evidence of the wisdom of the Commission's tentative conclusion that

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[44] MSS feeder links are by definition a type of FSS. *See* 47 C.F.R. § 2.1 (definition of "Fixed-Satellite Service.")

financial qualifications are not necessary in the 2 GHz proceeding.[45] Celsat has repeatedly urged the Commission to abandon imposition of financial qualifications prior to licensing for a variety of reasons, the most important of which is that there is little if any correlation between the commitment of an applicant to constructing, launching and operating a satellite system and the size of its balance sheet. The financial standards which have been applied to date in the satellite licensing process are not designed to predict success and instead simply favor large conglomerates with hefty balance sheets that may or may not be fully committed to implementing a proposed satellite system. The Commission also has leaned on financial qualifications as a convenient, albeit unfair way of resolving mutual exclusivity. A realistic look at the modern satellite business reveals that, given their low value as a predictor of success, the review of pre-licensing financial qualifications should be abandoned in favor of strictly enforced milestones that more accurately measure performance.

One commenter, BellSouth, urges that financial qualifications be imposed on 2 GHz applicants in order to ensure that licensed MSS systems will have the "wherewithal" to meet their relocation obligations.[46] The Commission imposes financial qualifications to ensure that systems will in fact be constructed, launched and operated – not for other incidental purposes such as guaranteeing payouts to incumbents facing relocation. In other

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45 Boeing is the only 2 GHz MSS applicant to unequivocally support the use of financial qualifications. Boeing Comments at 27.

46 BellSouth Comments at 6.

words, Commission precedent provides absolutely no support for BellSouth's position and the Commission should reject it.

VI. THE COMMISSION SHOULD ADOPT THE BIG LEO SERVICE RULES WITH ONLY MINOR ALTERATIONS TO SPEED THE 2 GHZ LICENSING PROCESS

Celsat strongly endorses the Commission's proposal to use the Big LEO Service rules as a template in the 2 GHz band.[47] Indeed, Celsat urges the Commission to avoid devoting significant attention to many of the proposals to alter the Big LEO service rules (or many other Commission rules for that matter) put forth in the comments because most of these proposals will serve only to delay licensing without any meaningful public interest benefit.

For example, the Commission should not under any circumstances grant CCI's proposal to extend milestones for Big LEO operators. CCI urges the Commission to consider extensions for Big LEO systems because, CCI claims, "it will be very difficult for any system operator to finance two systems at the same time."[48] If, as CCI apparently admits, it will not be able to finance its second generation system from the revenues of its first generation system, how is it possible that CCI needs the spectrum for its second generation system in the first place? CCI's proposal opens a pandora's box that will permit applicants to warehouse spectrum indefinitely and should be rejected by the Commission.

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47 NPRM at ¶ 3.

48 CCI Comments at 25.

Likewise, the Commission should resist efforts to complicate the 2 GHz licensing process any further by refusing to adopt Globalstar's proposal to incorporate the more stringent regulatory limits on out-of-band emissions from mobile earth terminals adopted by the ITU-R Sector Assembly and the European Telecommunications Standards Institute.[49] Terminal manufacturers should be allowed to decided whether to adopt more stringent limits than Commission rules currently require. Commission standards should be regarded as the minimum performance standard for U.S. compatibility and those manufacturers seeking to raise the performance standards in order to address a wider market should be allowed to do so. Otherwise, the cost of providing service in the U.S. will be increased unnecessarily.[50]

Aside from the clear necessity to abandon financial qualifications, the only other major change in the Big LEO service rules that Celsat regards as clearly promoting the public interest is the institution of Enhanced 911 capability requirements for MSS operators at 2 GHz. Given the obvious value of these services and the fact that provision of this service is fully consistent with the technological capabilities of MSS systems, the Commission should

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49 Globalstar Comments at 49.

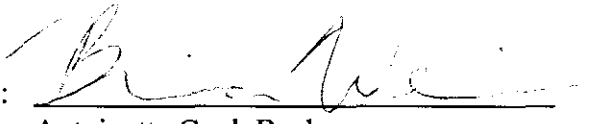
50 One other issue with respect to out-of-band emissions raised in the comments requires clarification. The Wireless Communications Association ("WCA") argues that the Commission should limit the out-of-band power flux density in the 2150-2162 MHz band reaching the ground from MSS systems to -154 dBW/m2/4KHz or -190 dBW/m2/Hz because, it claims, multipoint distribution services ("MDS") use +18dBI antennas. WCA Comments at 13. These antennas, however, have a main lobe only +/- 15 degrees wide. Given that MDS antennas are pointed horizontally, the elevation angle of Celsat's GSO satellite ensures that the satellite will always remain outside of the main lobe of the antenna. Accordingly, the restrictions WCA seek to place on MSS operators are unnecessarily strict and should not be adopted by the Commission.

not hesitate to include E911 capabilities in the 2 GHz service rules. However, given the time that may be necessary to develop appropriate rules for E911 service, this issue should perhaps be deferred to a Further NPRM and a subsequent Report and Order in order to avoid any further delay in licensing 2 GHz MSS systems.

VII. CONCLUSION

For the foregoing reasons, Celsat urges the Commission to take all steps necessary to conclude the 2 GHz licensing process by November 1999 and to adopt the flexible band plan.

Respectfully submitted,

By: 

Antoinette Cook Bush
John C. Quale
Brian D. Weimer
Skadden, Arps, Slate, Meagher & Flom LLP
1440 New York Avenue, N.W.
Washington, D.C. 20005-2111
202-371-7000

Mark A. Grannis
Kelly S. McGinn
Harris, Wiltshire & Grannis LLP
1200 18th Street, N.W.
Washington, DC 20036-2506
202-730-1300

Attorneys for Celsat America, Inc.

Dated: July 26, 1999

CERTIFICATE OF SERVICE

ORIGINAL

I, Tanisha Cobb, hereby certify that on this 26th day of July, 1999, copies of the foregoing "Reply Comments of Celsat America, Inc." were served by U.S. Mail or by hand delivery (*) on the following parties:

Chairman William Kennard*
Federal Communications Commission
The Portals II
445 12th Street, SW, Suite 8-B201
Washington, DC 20554
Phone: (202) 418-1000

Commissioner Harold Furchtgott-Roth*
Federal Communications Commission
The Portals II
445 12th Street, SW, Suite 8-A302
Washington, DC 20554
Phone: (202) 418-2000

Commissioner Michael K. Powell*
Federal Communications Commission
The Portals II
445 12th Street, SW, Suite 8-A204
Washington, DC 20554
Phone: (202) 418-2200

Commissioner Susan Ness*
Federal Communications Commission
The Portals II
445 12th Street, SW, Suite 8-B115
Washington, DC 20554
Phone: (202) 418-2100

Commissioner Gloria Tristani*
Federal Communications Commission
The Portals II
445 12th Street, SW, Suite 8-C302
Washington, DC 20554
Phone: (202) 418-2300

Alexander Roytblat*
International Bureau - Satellite & Radiocommunication Division
Federal Communications Commission
The Portals II
445 12th Street, SW, Rm. 6-A623
Washington, DC 20554
Phone: (202) 418-7501

Chris Murphy*
International Bureau - Satellite & Radiocommunication Division
Federal Communications Commission
The Portals II
445 12th Street, SW, Rm. 6-C437
Washington, DC 20554
Phone: (202) 418-2373

Karl A. Kensinger*
International Bureau - Satellite & Radiocommunication Division
Federal Communications Commission
The Portals II
445 12th Street, SW, Rm. 6-A663
Washington, DC 20554
Phone: (202) 418-0773

Thomas S. Tycz, Chief*
International Bureau - Satellite & Radiocommunication Division
Federal Communications Commission
The Portals II
445 12th Street, SW, Rm. 6-A665
Washington, DC 20554
Phone: (202) 418-0735

Howard Griboff*
International Bureau - Satellite & Radiocommunication Division
Federal Communications Division
The Portals II
445 12th Street, SW, Rm. 6-C467
Washington, DC 20554
Phone: (202) 418-0657

William D. Wallace, Esq.
Crowell & Moring LLP
1001 Pennsylvania Avenue, NW
Washington, DC 20004
Phone: (202) 624-2807
Fax: (202) 628-5116
Counsel to Global Star, L.P.

Robert A. Mazer
Albert Shuldiner
Counsel Vinson & Elkins L.L.P.
1455 Pennsylvania Avenue, NW
Washington, DC 20004
Phone: (202) 639-6755
Fax: (202) 639-6604
Counsel to Constellation
Communications, Inc.

Cheryl A. Tritt
Charles H. Kennedy
Morrison & Foerster LLP
2000 Pennsylvania Avenue, NW
Washington, DC 20036
Phone: (202) 887-1500
Counsel to ICO Services Limited

Patricia A. Mahoney, Esq.
IRIDIUM LLC
1575 Eye Street, NW, Suite 500
Washington, DC 20005
Phone: (202) 326-5795
Fax: (202) 408-3801

Kelly Cameron
Robert L. Galbreath
Powell, Goldstein, Frazer & Murphy
1001 Pennsylvania Avenue, NW
Sixth Floor
Washington, DC 20004
Counsel to Inmarsat

Peter Connolly
Koteen & Naftalin, L.L.P.
1150 Connecticut Avenue, NW
Suite 1000
Washington, DC 20046
Phone: (202) 467-5700
Fax: (202) 467-5915
Counsel to TMI Communications
and Company, L.P.

Carlos Mier y Terah, Director General
Telecomunicaciones de Mexico
Eje Central 567
Mexico D.F.

Gary M. Epstein
John P. Janka
Arthur S. Landerholm
Latham & Watkins
1001 Pennsylvania Avenue, NW
Suite 1300
Washington, DC 20004
Phone: (202) 637-2200
Counsel to Hughes Communications,
Inc. and Hughes Communications
Galaxy, Inc.

Jill Abeshouse Stern, Esq.
Shaw, Pittman, Potts & Trowbridge
2300 N Street, NW
Washington, DC 20037
Phone: (202) 663-8380
Fax: (202) 663-8007
Counsel to Mobile Communications
Holdings, Inc.

Thomas J. Keller
John M. R. Kneuer
Verner, Liipfert, Bernhard,
McPherson, and Hand, Chartered
901 15th Street, NW
Washington, DC 20005
Phone: (202) 371-6000
Counsel to the Association of
American Railroad

Robert L. James
Cole, Raywid & Braverman, L.L.P.
Suite 200
1919 Pennsylvania Avenue, NW
Washington, DC 20006
Phone: (202) 659-9750
Counsel to Century OCN
Programming, Inc.

Robert M. Gurss
Wilkes, Artes, Hedrick & Lane,
Chartered
1666 K Street, NW, #1100
Washington, DC 20006
Phone: (202) 457-7329
Counsel to APCO

Christopher D. Imlay
Booth, Freret, Imlay & Tepper
5101 Wisconsin Avenue, NW, Suite 307
Washington, DC 20016
Phone: (202) 686-9600
Counsel to the Society of Broadcast Engineers, Inc.

Bruce D. Jacobs
Stephen J. Berman
David S. Konczal
Fisher Wayland Cooper Leader & Zaragoza L.L.P
2001 Pennsylvania Avenue, NW
Suite 400
Washington, DC 20006
(202) 659-3494
Counsel to Pegasus Development Corp.

Kathy Smith, Acting Chief Counsel
National Telecommunications and Information Administration
U.S. Department of Commerce
1401 Constitution Avenue, NW
Rm. 4713
Washington, DC 20230
Phone: (202) 482-1816

Joan M. Griffin
Kelley Drye & Warren, L.L.P.
1200 - 19th Street, NW, Suite 500
Washington, DC 20036
Phone: (202) 955-9600
Counsel to BT North America Inc.

David G. Frolio
1133 21st Street, NW, Suite 900
Washington, DC 20036
Phone: (202) 463-4182
Counsel to BellSouth Corporation

Jennifer A. Smolker, Vice President & Assistant General Counsel
Hughes Electronics
Loc.ES, Bldg. 001, M/S A106
200 N. Sepulveda Boulevard
El Segundo, CA 90245
Phone: (310) 662-9935

Norman P. Leventhal
Walter P. Jacob
Leventhal, Senter & Lerman P.L.L.C.
2000 K Street, NW, Suite 600
Washington, DC 20006
Phone: (202) 429-8970
Counsel to TRW Inc.

Katherine M. Harris
A.B. Cruz
Wiley, Rein & Fielding
1776 K Street, NW
Washington, DC 20006
Phone: (202) 719-7000
Counsel to Personal Communications Industry Association

Philip L. Verveer
Angie Kronenberg
Sophie J. Keefer
Willkie Farr & Gallagher
Three Lafayette Centre
1155 - 21st Street, NW
Washington, DC 20036
Phone: (202) 328-8000
Counsel to WinStar Communications, Inc.

Bobby D. Melvin
Director of Legal and Regulatory Affairs
Bosch Telecom, Inc.
1125 E. Collins Boulevard
Richardson, TX 75081

Alfred G. Richter, Jr.
Roger K. Toppins
John S. di Bene
One Bell Plaza, Rm. 3022
Dallas, TX 75202
Phone: (214) 464-2040
Counsel to SBC Communications Inc.

Paul J. Sinderbrand
Wilkinson Barker Knauer, LLP
2300 N Street, NW
Washington, DC 20037
Phone: (202) 783-4141
Counsel to the Wireless
Communications Association
International, Inc.

Thomas E. Goode
Jeffrey L. Sheldon
UTC
1140 Connecticut Avenue, NW
Washington, DC 20036
Phone: (202) 872-0030

John L. Bartlett
Wiley, Rein & Fielding
1776 K Street, NW
Washington, DC 20006
Phone: (202) 719-7070
Counsel to Aeronautical Radio, Inc.

Herbert E. Marks
David A. Nall
Bruce A. Olcott
Benigno E. Bartolome
Squire, Sanders & Dempsey L.L.P.
1201 Pennsylvania Avenue, NW
Washington, DC 2004
Phone: (202) 626-6600
Counsel to The Boeing Company

Eric T. Werner
Verner, Liipfert, Bernhard,
McPherson, and Hand, Chartered
901 - 15th Street, NW, Suite 700
Washington, DC 20005
Phone: (202) 371-6000
Counsel to Iridium LLC

Robert M. Nutwell, RADM, USN
Deputy Assistant Secretary of Defense
(C3ISR & Space)
Office of the Assistant Secretary of
Defense
6000 Defense Pentagon
Washington, DC 20301

Tom Davidson, Esq.
Phil Marchesiello, Esq.
Akin, Gump, Strauss, Hauer &
Feld, L.L.P.
1333 New Hampshire Avenue, NW
Suite 400
Washington, DC 20036
Phone: (202) 887-4000
Counsel to Mobile Communications
Holdings, Inc.

Joseph D. Hersey, Jr., Chief,
Spectrum Management Division By
Direction of the Commandant
Commandant (G-SCT-2)
United States Coast Guard
2100 Second Street, SW
Washington, DC 20593
Phone: (202) 267-1358

Paul J. Feldman, Esq.
Fletcher, Heald & Hildreth, P.L.C.
1300 North 17th Street, 11th Floor
Rosslyn, VA 22209
Phone: (703) 812-0400
Counsel to the National Academies'
Committee on Radio Frequencies

Leonard R. Raish
Mitchell Lazarus
Fletcher, Heald & Hildreth, P.L.C.
1300 North 17th Street, 11th Floor
Arlington, VA 22209
(703) 812-0400
Counsel to the Fixed Wireless
Communications Coalition

Tanisha Cobb
Tanisha Cobb